

REMARKS/ARGUMENTS

Claims 1, 5, 7, 9-10, 12-16, 20, 22, 24-25, 27-31, 35, 37, 39-40, 42-45 are pending in the application. Claims 1, 5, 7, 9, 12, 15, 16, 20, 22, 24, 27, 30, 31, 35, 37, 39, 42, and 45 have been amended. Claims 2-3, 8, 17-18, 23, 32-33, and 38 were previously cancelled without prejudice. Claims 4, 6, 8, 11, 19, 21, 23, 26, 34, 36, 38, and 41 are cancelled without prejudice in this Amendment. Reconsideration is respectfully requested. Applicants submit that the pending claims are patentable over the art of record and allowance is respectfully requested of the pending claims.

Claims 31-45 are rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter. Applicants respectfully traverse, but, in order to expedite prosecution, Applicants have amended claims 31, 35, and 42. Claims 34, 36-37, 39-41, and 43-45 depend from claims 31, 35, or 42.

Applicants' Specification, paragraph 55, describes:

The term "article of manufacture" and "circuitry" as used herein refers to a state machine, code or logic implemented in hardware logic (e.g., an integrated circuit chip, Programmable Gate Array (PGA), Application Specific Integrated Circuit (ASIC), etc.) or a computer readable medium, such as magnetic storage medium (e.g., hard disk drives, floppy disks, tape, etc.), optical storage (CD-ROMs, optical disks, etc.), volatile and non-volatile memory devices (e.g., EEPROMs, ROMs, PROMs, RAMs, DRAMs, SRAMs, firmware, programmable logic, etc.).

Claims 31-45 are rejected under 35 U.S.C. 35 U.S.C. 112, second paragraph, as being indefinite as being directed to non-statutory subject matter. Applicants respectfully traverse, but, in order to expedite prosecution, Applicants have amended claims 31, 35, and 42. Claims 34, 36-37, 39-41, and 43-45 depend from claims 31, 35, or 42.

Claims 1, 4, 16, 19, 31, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prager et al. (US 7310341). Applicants respectfully traverse, but, in order to expedite prosecution, Applicants have amended certain claims.

Amended claims 1, 16, and 31 describe receiving input parameters of a list of data paths in a network adapter team, a total number of bytes transferred across the data paths in the network adapter team, a load balancing share of each data path, and a number of bytes transferred on each data path, wherein the load balancing share represents a percentage of a total read or write workload that a given data path in the network adapter team can take, wherein the load balancing share for at least one data path is different for a read workload and a write workload, wherein the load balancing share is specified by a user (e.g., Specification, paragraphs 24, 25). Amended claims 1, 16, and 31 also describe, for each data path in a network adapter team, computing a load balancing value by: dividing the total number of bytes by the number of bytes transferred on the data path to generate a first value and multiplying the first value by the load balancing share of the data path. Amended claims 1, 16, and 31 further describe determining a maximum value of the computed load balancing values and selecting a data path with the maximum value for use in routing data.

Applicants respectfully submit that the Prager patent does not teach or suggest *receiving input parameters of* a list of data paths in a network adapter team, a total number of bytes transferred across the data paths in the network adapter team, a load balancing share of each data path, and a number of bytes transferred on each data path. Applicants respectfully submit that the Prager patent does not teach or suggest that the load balancing share represents a percentage of a total read or write workload that a given data path in the network adapter team can take, wherein the load balancing share for at least one data path is different for a read workload and a write workload, wherein the load balancing share is specified by a user.

Also, the Prager patent at Col. 7, lines 1-4 describes that a trunk group list provides a list of possible physical connections that can forward calls to that ATM address. The Prager patent at Col. 8, lines 21-65 describes determining a load balance value for a trunk group. Determining a load balance value for a trunk group that provides a list of possible connections teaches away from, *for each data path in a network adapter team*, computing a load balancing value.

As to multiplying the first value by the load balancing share of the data path, the Examiner submits that it is inherent for multiplying the load balancing value by 100% to present

as in percentage. Applicants traverse. However, merely multiplying by 100% does not teach or suggest multiplying by the claimed load balancing share that represents a percentage of a total read or write workload that a given data path in the network adapter team can take, wherein the load balancing share for at least one data path is different for a read workload and a write workload, wherein the load balancing share is specified by a user.

The Prager patent describes an administrative factor score assigned to each trunk group for its cost factor (Col. 7, line 62-Col. 8, line 28), but such an administrative factor score does not teach or suggest a load balancing share that represents a percentage of a total read or write workload that a given data path in the network adapter team can take, wherein the load balancing share for at least one data path is different for a read workload and a write workload, wherein the load balancing share is specified by a user.

Thus, amended claims 1, 16, and 31 are not taught or suggested by the Prager patent.

Claims 5-7, 9-10, 20-22, 24-25, 35-37, and 39-40 are rejected under 35 U.S.C. 102(e) as being anticipated by Okamura et al. (U.S. 2004/0184483). Applicants respectfully traverse, but, to expedite prosecution, Applicants have amended certain claims. Claims 6, 21, and 36 have been incorporated into their independent claims 5, 20, and 35, respectively.

Anticipation requires that the identical invention must be shown in a single reference in as complete detail as is contained in the claims. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) [Emphasis added].

Amended claims 5, 20, and 35 describe receiving input parameters of a list of data paths in the network adapter team, a total number of bytes transferred by the network adapter team in a last time frame, a load balancing share of each data path in the last time frame, and a number of bytes transferred on each data path in the last time frame (e.g., Specification, paragraph 28); computing an actual load balancing share for each data path in a network adapter team by dividing the number of bytes transferred on that data path by a total number of bytes transferred by the network adapter team in the last time frame; computing a difference load balancing value for each data path in the network adapter team by subtracting the load balancing share of the data path from the actual load balancing share of the data path. Claims 5, 20, and 35 also describe, for each data path, determining whether the load balancing share for the data path in the last time frame is less than the actual load balancing share for the data path; and, in response to

determining that the load balancing share is less than the actual load balancing share, adjusting the load balancing share of the data path by: determining whether a difference between the load balancing share and the actual load balancing share is less than a change threshold; and, in response to determining that the difference between the load balancing share and the actual load balancing share is less than the change threshold, reducing the load balancing share of the data path; selecting another data path based on the difference load balancing value of each data path; and increasing the load balancing share of the selected data path.

The Okamura patent application describes a quality guaranteed flow that is referred to as a GS (Guaranteed Service) flow and a quality non-guaranteed flow that is referred to as a BES (Best Effort Service) flow (paragraph 61). The Okamura patent application also describes equations in paragraph 88: $WL - (WG + WB)$, $WL - (WG + Wb)$, and $WL - (Wg + Wb)$, where WL is a link's physical bandwidth, WG is a total of the already-reserved bandwidth for the GS flow, and WB is a total of the request bandwidth for the BES flow. The equations in paragraph 88 subtract GS and BES flows from the link's physical bandwidth, which does not anticipate *computing a difference load balancing value* for each data path in the network adapter team by subtracting the load balancing share of the data path from the actual load balancing share of the data path, where the load balancing share is received as an input parameter and the actual load balancing share is computing using the input parameters.

The Okamura patent application describes enabling a quantity of the traffic discarded to be reduced by effecting the load balancing of the BES flow while taking the bandwidth reserved for the GS flow into consideration (paragraph 269). Effecting the load balancing of the BES flow does not anticipate, in response to determining that the difference between the load balancing share and the actual load balancing share is less than the change threshold, *reducing the load balancing share of the data path*.

The Okamura patent application also describes that the route to be searched for the BES flow is selected so as to pass across the link with less of the amount of reserved GS flow and to pass across the link with less of the BES flow requests (paragraph 112). The Okamura patent describes selecting the most residual bandwidth based on the actual using bandwidths for GS and for BES (paragraph 113). Such selection does not anticipate selecting another data path *based on the difference load balancing value of each data path* and increasing the load balancing share of *the selected data path*.

Thus, claims 5, 20, and 35 are not anticipated by the Okamura patent application.

Dependent claims 7, 9-10, 22, 24-25, 37, and 39-40 each incorporate the language of one of independent claims 5, 20, and 35 and add additional novel elements. Therefore, dependent claims 7, 9-10, 22, 24-25, 37, and 39-40 are not anticipated by the Okamura patent application for at least the same reasons as were discussed with respect to claims 5, 20, and 35.

Claims 11, 26, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamura et al. (U.S. 2004/0184483) in view of background of Heiner et al (US 2004/0203827). Applicants respectfully traverse, however, to expedite prosecution, Applicants have incorporated claims 11, 26, and 41 into their independent claims 5, 20, and 35, respectively.

Applicants also respectfully submit that the Okamura patent application does not teach or suggest receiving input parameters of a list of data paths in the network adapter team, a total number of bytes transferred by the network adapter team in a last time frame, a load balancing share of each data path in the last time frame, and a number of bytes transferred on each data path in the last time frame. The Heiner patent application is cited as teaching this, but the Heiner patent application merely describes that load in this context refers to the amount of packets or bytes being transferred over nodes and links thus loading them (paragraph 4). Applicants respectfully submit that the Heiner patent application does not teach or suggest receiving input parameters of a list of data paths in the network adapter team, a total number of bytes transferred by the network adapter team in a last time frame, a load balancing share of each data path in the last time frame, and a number of bytes transferred on each data path in the last time frame. In addition, the Heiner patent application does not cure the defects of the Okamura patent application. For example, the Heiner patent application does not teach or suggest the subject matter of amended claims 5, 20, and 35. Therefore, Applicants respectfully submit that amended claims 5, 20, and 35 are not taught or suggested by the Okamura patent application or the Heiner patent application, either alone or in combination.

Claims 12-15, 27-30, and 42-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Carr et al. (USP 6,081,511). Applicants respectfully traverse, but, to expedite prosecution, Applicants have amended certain claims.

Anticipation requires that the identical invention must be shown in a single reference in as complete detail as is contained in the claims. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Amended claims 12, 27, and 42 describe, under control of a failover component, intercepting a command issued to a target; determining whether a mode is failover mode or failover and load balancing mode, wherein a first network adapter in a network adapter team is used to route data to the target and a second network adapter in the network adapter team is quiescent with respect to the target in the failover mode, and wherein the first network adapter and the second network adapter are used to route data to the target in the failover and load balancing mode; in response to determining that the mode is the failover and load balancing mode, working with a load balancing component to perform load balancing based on load balancing shares of data paths in the network adapter team; determining whether the command is capable of being routed through a first network adapter in the network adapter team to the target; routing the command through the first network adapter in response to determining that the command is capable of being routed through the first network adapter; routing the command through a second network adapter in the network adapter team in response to determining that the command is not capable of being routed through the first network adapter; and determining whether to switch between the failover mode and the failover and load balancing mode based on the load balancing shares of data paths between the network adapters in the network adapter team and the target, wherein, when one data path has a hundred percent load balancing share, then failover mode is used (e.g., Specification, paragraphs 42-43).

Applicants respectfully submit that the Carr patent does not anticipate the subject matter of amended claim 12, 27, and 42. For example, the Carr patent does not describe the claimed use of failover mode and failover and load balancing modes and the claimed switching between the two. Although the Carr patent describes that if the load sharing count is now 1, no actual load sharing will occur (Col. 19, lines 11-12), the Carr patent does not actively switch between modes. Also, the Carr patent does not describe the claimed interaction of the failover component and the load balancing component.

Thus, amended claims 12, 27, and 42 are not anticipated by the Carr patent.

Dependent claims 13-15, 28-30, and 43-45 each incorporate the language of one of independent claims 12, 27, and 42 and add additional novel elements. Therefore, dependent

claims 13-15, 28-30, and 43-45 are not anticipated by the Carr patent for at least the same reasons as were discussed with respect to claims 12, 27, and 42.

Conclusion

For all the above reasons, Applicants submit that the pending claims are patentable. Should any additional fees be required beyond those paid, please charge Deposit Account No. 50-0585.

The attorney of record invites the Examiner to contact her at (310) 553-7973 if the Examiner believes such contact would advance the prosecution of the case.

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